



TITLE OF THE INVENTION

DATA TRANSMISSION SYSTEM

Version with Markings to  
Show Changes Made

BACKGROUND OF THE INVENTION

5 Field of the Invention

[0001] The present invention relates to data transmission systems and, more specifically, to a data transmission system in which a server transmits files for details of shops and/or services, typically restaurants, to a potential customer's data terminal  
10 equipment.

Description of the Background Art

[0002] In recent years, the above type of data transmission system has been realized using the Internet technology. FIG. 27A  
15 is a block diagram showing a conventional data transmission system *Sdte*. In the data transmission system *Sdte*, a WWW server 101 and data terminal equipment 102 are connected to each other via the Internet 103 for data communications therebetween. To the data terminal equipment 102, a printer 104 is connected.

20 [0003] The WWW server 101 stores several ~~of a shop file files~~ *Fshop*, which is basically data about shop details and/or services (hereinafter, simply shop details) including a bonus coupon (see FIG. 27B) designed as the shop's owner wants. This bonus coupon is typically a discount coupon on meal charges.

25 [0004] The data terminal equipment 102 accesses the WWW server

101 through the Internet 103 responding to a user's operation,  
and retrieves the shop file *Fshop* designated by the user. The  
data terminal equipment 102 then displays on its screen the shop  
details in the shop file *Fshop*. By referring to the displayed  
5 | shop details including the coupon, if the user decides to go to  
the shop and wants to get the bonus offered by the coupon, he or  
she instructs the data terminal equipment 102 to print out the  
coupon. Responding to such an instruction, the shop file *Fshop*  
is transferred from the data terminal equipment 102 to the  
10 | corresponding printer 104. The printer 104 then responsively  
prints out on paper the contents of the shop file *Fshop*, and  
resultantly outputted is a printed material *Pout* on which at least  
the coupon is printed as shown in FIG. 27B. The user brings the  
printed material *Pout* to the corresponding shop, and hands it to  
15 | anyone working at the shop. It is not until then that the user  
is entitled to receive the bonus.

[0005] The problem here is that, in such a data transmission  
system *Sdte*, the user has to bother to print out ~~any coupon~~ the  
20 | coupon, whichever he or she wants, and bring it to the corresponding  
shop. Therefore, in terms of usability, the data transmission  
system *Sdte* is not user friendly.

#### SUMMARY OF THE INVENTION

[0006] Therefore, an object of the present invention is to  
25 | provide a data transmission system which can offer better

usability.

[0007] The present invention has the following features to attain the object above.

[0008] A first aspect of the present invention is directed to  
5 a data transmission system in which data communications is performed between first data terminal equipment placed on a bonus awarding side, and second data terminal equipment used by a user who is entitled to receive the bonus. The first data terminal equipment comprises a first bonus identifier storage for storing,  
10 as an internal bonus identifier, a bonus identifier provided to uniquely identify the bonus awarded to the second data terminal equipment. The second data terminal equipment comprises a bonus-attached file requesting part for requesting a bonus-attached file which is for the bonus, and including a bonus  
15 identifier which uniquely identifies the bonus; and a second bonus identifier storage for storing, as an external bonus identifier, the bonus identifier included in the bonus-attached file requested by the bonus-attached file requesting part. The first data terminal equipment further comprises a bonus identifier requesting  
20 part for requesting, through data communications with the second data terminal equipment, the external bonus identifier stored in the second bonus identifier storage; a determination part for determining whether or not the external bonus identifier requested by the bonus-identifier requesting part is the same as the internal  
25 bonus identifier stored in the first bonus identifier storage;

and a bonus awarding part for providing, when the determination  
part determines that the external bonus identifier ~~as being~~ is  
the same as the internal bonus identifier, the second data terminal  
equipment with the bonus specified by the internal bonus  
5 identifier.

[0009] The second aspect of the present invention is directed  
to data terminal equipment connected with external data terminal  
equipment placed on a bonus awarding side for communications  
therewith, and used by a user who is entitled to receive the bonus.  
10 The external data terminal equipment stores, as an external bonus  
identifier, a bonus identifier provided to uniquely identify the  
bonus awarded to the data terminal equipment. The data terminal  
equipment comprises: a bonus-attached file requesting part for  
requesting a bonus-attached file which is for the bonus, and  
15 including a bonus identifier which uniquely identifies the bonus;  
and a bonus identifier storage for storing, as an internal bonus  
identifier, the bonus identifier included in the bonus-attached  
file requested by the bonus-attached file requesting part. The  
external data terminal equipment requests, through data  
20 communications with the second data terminal equipment, the  
internal bonus identifier stored in the second bonus identifier  
storage; determines whether or not the internal bonus identifier  
requested by the bonus-identifier requesting part is the same as  
the external bonus identifier stored in itself, and provides, when  
25 the internal bonus identifier is determined as being the same as

the external bonus identifier, the data terminal equipment with the bonus specified by the internal bonus identifier.

[0010] A third aspect of the present invention is directed to data terminal equipment connected with external data terminal equipment used by a user who is entitled to receive the bonus for data communications therewith. The data terminal equipment comprises a bonus identifier storage for storing, as an internal bonus identifier, a bonus identifier provided to uniquely identify the bonus awarded to the external data terminal equipment. The external data terminal equipment requests ~~for~~ a bonus-attached file which is for the bonus, and including a bonus identifier which uniquely identifies the bonus, and stores, as an external bonus identifier, the bonus identifier included in the requested bonus-attached file. The data terminal equipment further comprises: a bonus identifier requesting part for requesting the external bonus identifier stored in the external bonus identifier storage; a determination part for determining whether or not the external bonus identifier requested by the bonus-identifier requesting part is the same as the internal bonus identifier stored in the first bonus identifier storage; and a bonus awarding part for providing, when the determination part determines that the external bonus identifier ~~as being~~ is the same as the internal bonus identifier, the external data terminal equipment with the bonus specified by the internal bonus identifier.

[0011] These and other objects, features, aspects and

advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

5 BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a block diagram showing the structure of a data transmission system  $Sdt_1$  according to a first embodiment of the present invention, or as its modified example, of a data transmission system  $Sdt_1'$ ;

10 FIG. 2 is a block diagram showing the structure of a WWW server  $1_1$  of FIG. 1;

FIGS. 3A and 3B are schematic illustrations, respectively, of formdata  $Dform1$  and a bonus-attached file  $Fbonus1$  to be used in the data transmission system  $Sdt_1$  of FIG. 1;

15 FIG. 4 is a block diagram showing the structure of data terminal equipment  $2_1$  of FIG. 1;

FIG. 5 is a block diagram showing the structure of data terminal equipment  $3_1$  of FIG. 1;

[0013] FIG. 6 is a sequence chart for data communications  
20 between the WWW server  $1_1$  and the data terminal equipment  $2_1$  of FIG. 1;

FIG. 7 is a sequence chart for data communications between the WWW server  $1_1$  and the data terminal equipment  $3_1$  of FIG. 1;

25 FIG. 8 is a sequence chart for data communications

between the WWW server 2<sub>1</sub> and the data terminal equipment 3<sub>1</sub> of FIG. 1;

FIG. 9 is a schematic exemplary illustration specifically showing items *ITname*, *ITinfo*, *ITcob*, and *ITiob* shown in FIG. 3A;

FIG. 10 is a sequence chart for data communications between the WWW server 1<sub>1</sub> and the data terminal equipment 2<sub>1</sub> in the data transmission system *Sdt*<sub>1</sub>' of FIG. 1;

[0014] FIG. 11 is a block diagram showing the structure of a data transmission system *Sdt*<sub>2</sub> according to a second embodiment of the present invention;

FIG. 12 is a block diagram showing the structure of data terminal equipment 2<sub>2</sub> of FIG. 11;

FIG. 13 is a block diagram showing the structure of data terminal equipment 3<sub>2</sub> of FIG. 11;

FIG. 14A is a block diagram showing the structure of a center station 6<sub>2</sub> of FIG. 11, and FIG. 14B is a schematic illustration showing the detailed structure of a personal database *DBuser* of FIG. 14A;

FIG. 15 is a sequence chart for data communications between the data terminal equipment 2<sub>2</sub> and the data terminal equipment 3<sub>2</sub> of FIG. 11;

[0015] FIG. 16 is a sequence chart for data communications between the data terminal equipment 2<sub>2</sub> and the center station 6<sub>2</sub> of FIG. 11;

FIG. 17 is a block diagram showing the structure of a data transmission system *Sdt*<sub>3</sub> according to a third embodiment of the present invention;

FIG. 18 is a block diagram showing the structure of a  
5 WWW server 1<sub>3</sub> of FIG. 17;

FIG. 19A is a schematic illustration of an input form *Fin*<sub>3</sub> represented by form data *Dform*<sub>3</sub> of FIG. 18, and FIG. 19B is a schematic illustration showing an input example of items *ITname*, *ITaddr*, and *ITnote* shown in FIG. 19A;

10 FIGS. 20A and 20B are schematic illustrations, respectively, of shop details *INshop*<sub>3</sub> in a bonus-attached file *Fbonus*<sub>3</sub> of FIG. 18, and the data structure of the bonus-attached file *Fbonus*<sub>3</sub>;

[0016] FIGS. 21A and 21B show, respectively, a conversion table  
15 *Tconv*<sub>31</sub> of FIG. 18 and a conversion table *Tconv*<sub>32</sub> of FIG. 22;

FIG. 22 is a block diagram showing the structure of data terminal equipment 3<sub>3</sub> of FIG. 17;

FIG. 23 is a sequence chart for data communications between the WWW server 1<sub>3</sub> and the data terminal equipment 2<sub>1</sub> of  
20 FIG. 17;

FIG. 24 is a sequence chart for data communications between the WWW server 1<sub>3</sub> and the data terminal equipment 3<sub>3</sub> of FIG. 17;

FIG. 25 is a flowchart of the detailed procedure of  
25 sequence *SQ*<sub>59</sub> of FIG. 24;



[0017] FIG. 26 is a flowchart of the detailed procedure of sequence SQ60 of FIG. 24; and

FIGS. 27A and 27B are illustrations for describing a conventional data transmission system *Sdtc*.

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#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 is a block diagram showing the structure of a data transmission system *Sdt*<sub>1</sub> according to a first embodiment of the present invention. The data transmission system *Sdt*<sub>1</sub> roughly  
10 includes a WWW (World Wide Web) server 1<sub>1</sub>, data terminal equipment (device) 2<sub>1</sub>, and data terminal equipment (device) 3<sub>1</sub>. Herein, the WWW server 1<sub>1</sub>, and the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> are so structured as to be accessible to the Internet 4<sub>1</sub>. With such a structure, at least the WWW server 1<sub>1</sub> can perform data  
15 communications with the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> over the Internet 4<sub>1</sub>. Moreover, the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> can perform data communications therebetween over a wireless transmission path 5<sub>1</sub>.

[0018] The WWW server 1<sub>1</sub> is managed by an information provider,  
20 who stores a bonus-attached file *Fbonus1* (see FIG. 3B) in the WWW server 1<sub>1</sub> responding to a request from the shop, and by using the bonus-attached file *Fbonus1*, provides the shop details to the user. The WWW server 1<sub>1</sub> includes, as shown in FIG. 2, a CPU (Central Processing Unit) 11<sub>1</sub>, ROM (Read Only Memory) 12<sub>1</sub>, RAM (Random Access  
25 Memory) 13<sub>1</sub>, a form data storage 14<sub>1</sub>, a bonus-attached file storage

15<sub>1</sub>, and a communications controller 16<sub>1</sub>. The CPU 11<sub>1</sub> goes through various processes by following a computer program (hereinafter, simply ~~refers~~ referred to as a program) *Psvr* which is previously recorded on the ROM 12<sub>1</sub>. When executing the program *Psvr*, the CPU 11<sub>1</sub> uses the RAM 13<sub>1</sub> as a working area. The form data storage 14<sub>1</sub> is typically composed of a hard disk drive, and stores form data *Dform1* (see FIG. 3A) in a storage location specified by a predetermined first URL (Uniform Resource Locator). The bonus-attached file storage 15<sub>1</sub> stores a bonus-attached file *Fbonus1* (see FIG. 3B) in a storage location specified by a predetermined second URL. The bonus-attached file storage 15<sub>1</sub> also stores a base file *Fbase1* in a predetermined storage location. The base file *Fbase1* represents the background of the bonus-attached file *Fbonus1*, and is used when the WWW server 1<sub>1</sub> creates the bonus-attached file *Fbonus1* (see sequence SQ8 of FIG. 6). Here, the base file *Fbase1* is used only by the WWW server 1<sub>1</sub>, and thus there is no need to assign a URL to indicate where the base file *Fbase1* has been stored. In accordance with the Internet protocol, the communications controller 16<sub>1</sub> sends out various data transferred from the RAM 13<sub>1</sub> to the Internet 4<sub>1</sub>, or receives various data transmitted over the Internet 4<sub>1</sub> and transfers the data to the RAM 13<sub>1</sub>.

[0019] Described now are the above described form data *Dform1* and the bonus-attached file *Fbonus1*. With the form data *Dform1*, such an input form *Fin1* as shown in FIG. 3A can be displayed at

least by the data terminal equipment 2<sub>1</sub>. The input form *Finl* is so structured as to allow someone working in the shop (typically the shopkeeper or his or her employees) using the data terminal equipment 2<sub>1</sub> to fill out items *IT*, which are needed to create the bonus-attached file *Fbonus1*. ~~In the below~~Below, anyone working in the shop is simply referred to as a shopkeeper for convenience. As to the items *IT*, to be filled out in the present embodiment are four of those *ITname*, *ITinfo*, *ITcob*, and *ITiob* selected by the information provider. Specifically, the item *ITname* is a shop name, and the item *ITinfo* is shop information, including a shop address, a phone number, or a map around the shop, or at least two of those. The item *ITcob* is details of a bonus, which denotes herein a merit awarded specially to the user who becomes the customer of the shop. The item *ITiob* is a bonus identifier *IDbonus* for uniquely identifying the bonus. With these four items *IT* selected, the input form *Finl* is structured by four input columns *Cname*, *Cinfo*, *Ccob*, and *Ciob*. ~~The shopkeeper~~ shopkeeper, using the data terminal equipment ~~2<sub>1</sub>~~ 2<sub>1</sub>, fills out those input columns with, respectively, a shop name (item *ITname*), shop information (item *ITinfo*), bonus details (item *ITcob*), and the corresponding bonus identifier *IDbonus* (item *ITiob*).

**[0020]** The input form *Finl* has a transmission button *Btx1*, a function assigned to which is of transmitting the items *ITname*, *ITinfo*, *ITcob*, and *ITiob* filled out in the input columns *Cname*, *Cinfo*, *Ccob*, and *Ciob* to the WWW server 1<sub>1</sub>. The transmission button

*Btx1* is clicked by the shopkeeper using the data terminal equipment 2<sub>1</sub>. When the transmission button *Btx1* is clicked, the data terminal equipment 2<sub>1</sub> responsively transmits, to the WWW server 1<sub>1</sub>, item data *Ditem1* (see FIG. 6) including those inputted items *ITname*,  
5 *ITinfo*, *ITcob*, and *ITiob*.

[0021] Described next is the bonus-attached file *Fbonus1*, which is created by the WWW server 1<sub>1</sub> using the item data *Ditem1* and base data *Dbase1*. With the bonus-attached file *Fbonus1*, such shop details *INshop1* as shown in FIG. 3B can be displayed at least on  
10 the data terminal equipment 3<sub>1</sub> side. The bonus-attached file *Fbonus1* herein represents a shop name (item *ITname*), shop information (item *ITinfo*), bonus details (item *ITcob*), and the corresponding bonus identifier *IDbonus* (Item *ITiob*).

[0022] ~~Refer~~Referring back to ~~FIG. 1.~~ The FIG. 1, the data  
15 terminal equipment 2<sub>1</sub> is an information device which is placed on the shop side, and operated by the shopkeeper. The data terminal equipment 2<sub>1</sub> includes, as shown in FIG. 4, a CPU 21<sub>1</sub>, ROM 22<sub>1</sub>, RAM 23<sub>1</sub>, an input unit 24<sub>1</sub>, an output unit 25<sub>1</sub>, a bonus identifier storage 26<sub>1</sub>, a first communications controller 27<sub>1</sub>,  
20 and a second communications controller 28<sub>1</sub>. The CPU 21<sub>1</sub> goes through various processes by following a computer program (hereinafter, simply a program) *Psdtc* which is previously recorded on the ROM 22<sub>1</sub>. When executing the program *Psdtc*, the CPU 21<sub>1</sub> uses the RAM 23<sub>1</sub> as a working area. The input unit 24<sub>1</sub> is typically  
25 composed of both a keyboard and a mouse, and therethrough, commands

and data are inputted into the data terminal equipment 2<sub>1</sub>. The output unit 25<sub>1</sub> typically includes a display, and externally outputs a processing result of the CPU 21<sub>1</sub> as images. The bonus identifier storage 26<sub>1</sub> is typically composed of a hard disk drive, and stores the above described bonus identifier *IDbonus*. In accordance with the Internet protocol, the first communications controller 27<sub>1</sub> sends out various data transferred from the RAM 23<sub>1</sub> to the Internet 4<sub>1</sub>, or receives various data transmitted over the Internet 4<sub>1</sub> and transfers the data to the RAM 23<sub>1</sub>. Since often immovably placed in the shop, the data terminal equipment 2<sub>1</sub> is preferably accessible to the Internet 4<sub>1</sub> using digital subscriber lines, for example. In accordance with the standard for the predetermined short-range wireless communications, the second communications controller 28<sub>1</sub> sends out various data transferred from the RAM 23<sub>1</sub> to the wireless transmission path 5<sub>1</sub>, or receives various data transmitted over the wireless transmission path 5<sub>1</sub> and transfers the data to the RAM 23<sub>1</sub>. Here, the typical standard for wireless communications is Bluetooth.

**[0023]** The data terminal equipment 3<sub>1</sub> is an information device typified by PDAs (Personal Digital Assistants), navigation devices, or mobile phones, and structured as being carried along by the user, i.e., the shop customer. The data terminal equipment 3<sub>1</sub> includes, as shown in FIG. 5, a CPU 31<sub>1</sub>, ROM 32<sub>1</sub>, RAM 33<sub>1</sub>, an input unit 34<sub>1</sub>, an output unit 35<sub>1</sub>, a bonus identifier storage 36<sub>1</sub>, a first communications controller 37<sub>1</sub>, and a second communications

controller 38<sub>1</sub>. The CPU 31<sub>1</sub> goes through various processes by following a computer program (hereinafter, simply a program) *Pudte* which is previously recorded on the ROM 32<sub>1</sub>. When executing the program *Pudte*, the CPU 31<sub>1</sub> uses the RAM 33<sub>1</sub> as a working area.

5 The input unit 34<sub>1</sub> is typically composed of a pen or a keyboard, and therethrough, commands and data are inputted into the data terminal equipment 3<sub>1</sub>. The output unit 35<sub>1</sub> typically includes a display, and externally outputs a processing result of the CPU 31<sub>1</sub> as images. The bonus identifier storage 36<sub>1</sub> is typically

10 composed of a hard disk drive, and stores the above described bonus identifier *IDbonus*. In accordance with the Internet protocol, the first communications part 37<sub>1</sub> sends out various data transferred from the RAM 33<sub>1</sub> to the Internet 4<sub>1</sub>, or receives various data transmitted over the Internet 4<sub>1</sub> and transfers the data to the

15 RAM 33<sub>1</sub>. Here, the first communications controller 37<sub>1</sub> is preferably structured as to be accessible to the Internet 4<sub>1</sub> using mobile phones or public telephones for ISDN (Integrated Service Digital Network) because the data terminal equipment 3<sub>1</sub> is carried along by the user. The second communications controller 38<sub>1</sub> sends

20 out, in accordance with the same standard as the second communications controller 28<sub>1</sub> for the short-range wireless communications, various data transferred from the RAM 33<sub>1</sub> to the wireless transmission path 5<sub>1</sub>, or transfers various data transmitted over the wireless transmission path 5<sub>1</sub> to the RAM 33<sub>1</sub>.

25 **[0024]** Referring to FIGS. 6 to 8, described next is data

communications performed in the data transmission system *Sdt*<sub>1</sub>. Referring to FIG. 6, described first is data communications between the WWW server 1<sub>1</sub> and the data terminal equipment 2<sub>1</sub>. In FIG. 6, the shopkeeper operates the data terminal equipment 2<sub>1</sub> to request the information provider to create and store a bonus-attached file *Fbonus*<sub>1</sub> for his or her shop. At the time of such a request, the CPU 21<sub>1</sub> executes a process written in the program *Psdte* responding to the shopkeeper's operation. More in detail, the CPU 21<sub>1</sub> first accesses the Internet 4<sub>1</sub> (sequence SQ1).

10   **[0025]**    Then, the shopkeeper enters the first URL through operation of the input unit 24<sub>1</sub>. The CPU 21<sub>1</sub> responsively generates on the RAM 23<sub>1</sub> a request *RSfd*<sub>1</sub> including the first URL, and transfers it to the first communications controller 27<sub>1</sub>. Here, the request *RSfd*<sub>1</sub> is a signal for requesting the WWW server 1<sub>1</sub> to transmit the form data *Dform*<sub>1</sub> to the data terminal equipment 2<sub>1</sub>. The first communications controller 27<sub>1</sub> sends out thus received request *RSfd*<sub>1</sub> onto the Internet 4<sub>1</sub>. In such a manner, a request is made for the form data *Dform*<sub>1</sub> (sequence SQ2).

15   **[0026]**    The request *RSfd*<sub>1</sub> is forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>1</sub>, and then transferred to the RAM 13<sub>1</sub>. After the request *RSfd*<sub>1</sub> is stored in the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> executes a process written in the program *PSrvr*. To be specific, the CPU 11<sub>1</sub> extracts the first URL from the request *RSfd*<sub>1</sub> on the RAM 13<sub>1</sub>, and then from the storage location of the form data storage 14<sub>1</sub> which is specified by the first URL,

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reads the form data *Dform1* onto the RAM 13<sub>1</sub>. Then, the CPU 11<sub>1</sub> transfers the form data *Dform1* on the RAM 13<sub>1</sub> to the communications controller 16<sub>1</sub>. The communications controller 16<sub>1</sub> sends out the form data *Dform1* onto the Internet 4<sub>1</sub> (sequence SQ3).

5   **[0027]**     The form data *Dform1* is forwarded over the Internet 4<sub>1</sub> to the first communications controller 27<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> transfers the form data *Dform1* on the RAM 23<sub>1</sub> to the output unit 25<sub>1</sub>. The output unit 25<sub>1</sub> performs a display process in accordance  
10 with the received form data *Dform1* so as to display on its screen such an input form *Fin1* as shown in FIG. 3A (sequence SQ4).

**[0028]**     After the input form *Fin1* is displayed, the shopkeeper operates the input unit 24<sub>1</sub> to fill out the input columns *Cname*, *Cinfo*, *Ccob*, and *Ciob* with, respectively, the shop name (item  
15 *ITname*), the shop information (item *ITinfo*), the bonus details (item *ITcob*), and the corresponding bonus identifier *IDbonus* (item *ITiob*). As exemplarily shown in FIG. 9, the shopkeeper herein presumably fills out the input column *Cname* with the shop name "pub X", attaches a map image around the pub X to the input column  
20 *Cinfo* as shop information, fills out the input column *Ccob* with "20% OFF on meal charges" as bonus details, and fills out the input column *Ciob* ~~by~~ with "yyyy" as the bonus identifier *IDbonus*. After completely filling out the input form *Fin1* as such, the shopkeeper clicks the transmission button *Btx1* through the input unit 24<sub>1</sub>.  
25 Then, the CPU 21<sub>1</sub> creates the item data *Ditem1* including those



inputted items *ITname*, *ITinfo*, *ITcob*, and *ITiob* on the RAM 23<sub>1</sub> (sequence SQ5).

[0029] Then, the CPU 21<sub>1</sub> stores the inputted bonus identifier *IDbonus* to the bonus identifier storage 26<sub>1</sub> (sequence SQ6). Here, the bonus identifier *IDbonus* stored in sequence SQ6 is referred to as an internal bonus identifier *IDbonus'* ~~in the~~ below. The internal bonus identifier *IDbonus'* is used in sequence SQ22 which will be later described, so that details thereof are left for later description. Here, the timing for sequence SQ6 is not restrictive as long as being it is carried out after the bonus identifier *IDbonus* is entered by the shopkeeper, and before sequence SQ22 is carried out. In the above presumption, stored in sequence SQ6 is yyyy (see FIG. 9).

[0030] Next, the CPU 21<sub>1</sub> transfers the item data *Ditem1* ~~on~~ in the RAM 23<sub>1</sub> to the first communications controller 27<sub>1</sub>, from which the item data *Ditem1* is sent out onto the Internet 4<sub>1</sub> (sequence SQ7).

[0031] The item data *Ditem1* is forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>1</sub>, and then transferred to the RAM 13<sub>1</sub>. Then, the CPU 11<sub>1</sub> creates a bonus-attached file *Fbonus1* (sequence SQ8). To be more specific, the CPU 11<sub>1</sub> reads the base file *Fbase1* to the RAM 13<sub>1</sub> from the bonus-attached file storage 15<sub>1</sub>. Then, the CPU 11<sub>1</sub> arranges the items *ITname*, *ITinfo*, *ITcob*, and *ITiob* included in the item data *Ditem1* onto each predetermined position on the background

represented by the base file *Fbase1*. In this manner, the bonus-attached file *Fbonus1* is created. Assuming that the items *ITname*, *ITinfo*, *ITcob*, and *ITiob* are those shown in FIG. 9, the bonus-attached file *Fbonus1* will be the one shown in FIG. 3B.

5 [0032] Then, the CPU 11<sub>1</sub> allocates the second URL to the bonus-attached file *Fbonus1* on the RAM 13<sub>1</sub>, and then to the storage location of the bonus-attached file storage 15<sub>1</sub> specified by the second URL, stores the bonus-attached file *Fbonus1* (sequence SQ9). This allows the user's data terminal equipment 3<sub>1</sub> to request the  
10 bonus-attached file *Fbonus1* in sequence SQ14 of FIG. 7.

[0033] After creating a storage completion acknowledgement *ASsc1*, the CPU 11<sub>1</sub> transfers it to the communications controller 16<sub>1</sub>. Here, the storage completion acknowledgement *ASsc1* is a signal including a message telling that the bonus-attached file  
15 *Fbonus1* is now stored in the bonus-attached file storage 15<sub>1</sub>, and is forwarded to the data terminal equipment 2<sub>1</sub>. The communications controller 16<sub>1</sub> sends out thus received storage completion acknowledgement *ASsc1* onto the Internet 4<sub>1</sub> (sequence SQ10).

[0034] The storage completion acknowledgement *ASsc1* is  
20 forwarded over the Internet 4<sub>1</sub> to the first communications controller 27<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> transfers the storage completion acknowledgement *ASsc1* thus stored in the RAM 23<sub>1</sub> to the output unit 25<sub>1</sub>. The output unit 25<sub>1</sub> executes a display process  
25 in accordance with the received storage completion acknowledgement

ASsc1, and then displays on its screen the message included therein  
(sequence SQ11). This~~—makes~~ acknowledges to the shopkeeper  
~~acknowledge~~ that his or her request is now processed by the  
information provider, i.e., the WWW server 1<sub>1</sub>. Then, the CPU 21<sub>1</sub>  
5 cuts off access to the Internet 4<sub>1</sub> (sequence SQ12).

[0035] In the above embodiment, sequences SQ1 to SQ12 are  
presumed to be gone through successively for convenience. This  
is not restrictive, and after sequence SQ7 is through, the CPU  
21<sub>1</sub> may cut off access to the Internet 4<sub>1</sub>. This is because it may  
10 take time to create the bonus-attached file *Fbonus1*, and if so,  
the shopkeeper may have to wait~~—long~~ a long time, and may be charged  
for extra communications expenses. If this is the case, the WWW  
server 1<sub>1</sub> preferably transmits an e-mail including the same message  
as in the storage completion acknowledgement ASsc1 to the data  
15 terminal equipment 2<sub>1</sub>. The shopkeeper thus can read the message  
whenever convenient, thereby shortening waiting time and reducing  
communications expenses.

[0036] Referring to FIG. 7, described next is data  
communications between the WWW server 1<sub>1</sub> and the data terminal  
20 equipment 3<sub>1</sub>. Through operation of the data terminal equipment  
3<sub>1</sub>, the user browses the bonus-attached file *Fbonus1* stored in  
the WWW server 1<sub>1</sub>. During such browsing, the CPU 31<sub>1</sub> executes a  
process written in the program *Pudte* responding to the user's  
operation. More specifically, the CPU 31<sub>1</sub> accesses the Internet  
25 4<sub>1</sub> (sequence SQ13).

[0037] Then, the user operates the input unit 34<sub>1</sub> to enter the second URL. The CPU 31<sub>1</sub> generates on the RAM 33<sub>1</sub> a request *RSsd1* including the second URL, and transfers it to the first communications controller 37<sub>1</sub>. Here, the request *RSsd1* is a signal  
5 for requesting the WWW server 1<sub>1</sub> to forward the bonus-attached file *Fbonus1* to the data terminal equipment 3<sub>1</sub>. The first communications controller 37<sub>1</sub> sends out the received request *RSsd1* onto the Internet 4<sub>1</sub>. As such, a request is made for the bonus-attached file *Fbonus1* (sequence SQ14).

10 [0038] The request *RSsd1* is forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>1</sub>, and then transferred to the RAM 13<sub>1</sub>. After the request *RSsd1* is stored in the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> executes a process written in the program *Psrvr*. To be specific, the CPU 11<sub>1</sub> extracts the second URL from  
15 the request *RSsd1* on the RAM 13<sub>1</sub>, and from the storage location of the bonus-attached file storage 15<sub>1</sub> specified by the second URL, reads the bonus-attached file *Fbonus1* onto the RAM 13<sub>1</sub>. Then, the CPU 11<sub>1</sub> transfers the bonus-attached file *Fbonus1* on the RAM 13<sub>1</sub> to the communications controller 16<sub>1</sub>, from which the received  
20 bonus-attached file *Fbonus1* is sent out onto the Internet 4<sub>1</sub> (sequence SQ15).

[0039] The bonus-attached file *Fbonus1* is forwarded over the Internet 4<sub>1</sub> to the first communications controller 37<sub>1</sub> in the data terminal equipment 3<sub>1</sub>, and then transferred to the RAM 33<sub>1</sub>. The  
25 CPU 31<sub>1</sub> then transfers the bonus-attached file *Fbonus1* on the RAM

33<sub>1</sub> to the output unit 35<sub>1</sub>. The output unit 35<sub>1</sub> executes a display process in accordance with the received bonus-attached file *Fbonus1*, and displays on its screen an image representing the shop details *INshop1* (sequence SQ16). In this manner, the shop details *INshop1* becomes available for the user to browse. Here, in the present embodiment, the user is assumed to browse the one shown in FIG. 3B.

[0040] After sequence SQ16, if the user decides to go to the displayed shop, and if he or she wants to get the bonus offered by the shop, the user operates the input unit 34<sub>1</sub> to instruct as such. In response, the CPU 31<sub>1</sub> stores the bonus identifier *IDbonus* included in the bonus-attached file *Fbonus1* on the RAM 33<sub>1</sub> into the bonus identifier storage 36<sub>1</sub> (sequence SQ17). Here, the bonus identifier *IDbonus* thus stored in sequence SQ17 is now referred to as an external bonus identifier *IDbonus*". The external bonus identifier *IDbonus*" is used in sequence SQ22 which will be described later, and thus is not described in detail here. In this example, the external bonus identifier *IDbonus*" this time is yyyy (see FIG. 3B).

After sequence SQ17 is through, the CPU 21<sub>1</sub> cuts off access to the Internet 4<sub>1</sub> (sequence SQ18).

[0041] After sequence SQ18, the user carries the data terminal equipment 3<sub>1</sub> with him or her to get services from the target shop, and/or make purchases thereat. Here, the target shop is the one displayed in sequence SQ16. In the present embodiment, it is

assumed that the target shop is the pub X shown in the shop details  
INshop1 of FIG. 3B. The user receives the bonus displayed in  
sequence SQ16 from the target shop. To receive the bonus, such  
data communications as shown in FIG. 8 ~~is~~ are performed between  
5 the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub>.

[0042] In FIG. 8, the CPU 21<sub>1</sub> in the data terminal equipment  
2<sub>1</sub> executes a process written in the program *Psdtc* responding to  
the shopkeeper's operation. In detail, the CPU 21<sub>1</sub> establishes  
a connection with the data terminal equipment 3<sub>1</sub> in accordance  
10 with the standard for the short-range wireless communications  
(sequence SQ19). After such a connection ~~establishment~~ is  
established, the CPU 31<sub>1</sub> on the data terminal equipment 3<sub>1</sub> side  
executes a process written in the program *Pudtc*.

[0043] Then, the CPU 21<sub>1</sub> generates a request *RSiob* ~~on~~ in the  
15 RAM 33<sub>1</sub>, and transfers it to the second communications controller  
28<sub>1</sub>. Here, the request *RSiob* is a signal for requesting the data  
terminal equipment 3<sub>1</sub> to transmit the external bonus identifier  
*IDbonus*" to the data terminal equipment 2<sub>1</sub>. The second  
communications controller 28<sub>1</sub> sends out the received request *RSiob*  
20 onto the wireless transmission path 5<sub>1</sub>. As such, a request is  
made for the bonus identifier (sequence SQ20).

[0044] The request *RSiob* is forwarded over the wireless  
transmission path 5<sub>1</sub> to the second communications controller 38<sub>1</sub>  
in the data terminal equipment 3<sub>1</sub>, and then transferred to the  
25 RAM 33<sub>1</sub>. After the request *RSiob* is stored in the RAM 33<sub>1</sub>, the

CPU 31<sub>1</sub> reads the external bonus identifier *IDbonus*" from the bonus identifier storage 36<sub>1</sub> onto the RAM 33<sub>1</sub>. Then, the CPU 31<sub>1</sub> transfers the external bonus identifier *IDbonus*" on the RAM 33<sub>1</sub> to the second communications controller 38<sub>1</sub>, from which the received external  
5 bonus identifier *IDbonus*" is sent out onto the wireless transmission path 5<sub>1</sub> (sequence SQ21).

[0045] The external bonus identifier *IDbonus*" is forwarded over the wireless transmission path 5<sub>1</sub> to the second communications controller 28<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then  
10 transferred to the RAM 23<sub>1</sub>. Then, the CPU 21<sub>1</sub> reads the internal bonus identifier *IDbonus*' from the bonus identifier storage 26<sub>1</sub> onto the RAM 23<sub>1</sub>. Here, the timing for reading the internal bonus identifier *IDbonus*' is not restrictive as long as it is after sequence SQ19, and before sequence SQ22. As such, the RAM 23<sub>1</sub>  
15 stores both the internal and external bonus identifiers *IDbonus*' and *IDbonus*". The CPU 21<sub>1</sub> determines whether the external bonus identifier *IDbonus*" is the same as the internal bonus identifier *IDbonus*' (sequence SQ22).

[0046] When the external bonus identifier *IDbonus*" is the same  
20 as the internal bonus identifier *IDbonus*', the CPU 21<sub>1</sub> determines that the user is the one visiting the shop due to the shop details *INshop1*, and the procedure goes to sequence SQ23. Then, the CPU 21<sub>1</sub> executes a process of awarding the bonus to the user (sequence SQ23). In the present embodiment, the user is assumed as visiting  
25 the shop due to the shop details *INshop1* of FIG. 3B, and the external

bonus identifier *IDbonus*" stored in the data terminal equipment 3<sub>1</sub> is yyyy. Also, the target shop is assumed as being the one in the shop details *INshop1* of FIG. 3B, and thus the internal bonus identifier *IDbonus'* stored in the data terminal equipment 2<sub>1</sub> is  
5 yyyy. Accordingly, the user gets a bonus of 20% OFF on meal charges. In sequence SQ23, specifically, the CPU 21<sub>1</sub> has the output unit 25<sub>1</sub> ~~displayed~~ display the resultant 20% deducted amount of the charge. The shopkeeper accordingly charges the user for the amount displayed on the display 25<sub>1</sub>.

10           After sequence SQ23 is through, the CPU 21<sub>1</sub> cuts off the connection with the data terminal equipment 3<sub>1</sub> (sequence SQ24).

[0047]       Refer to sequence SQ22 again. In the case where the external bonus identifier *IDbonus*" is not the same as the internal bonus identifier *IDbonus'*, the CPU 21<sub>1</sub> determines that the user  
15 is not the one visiting the shop due to the shop details *INshop1*, and thus sequence SQ23 is skipped and SQ24 is carried out. In other words, the CPU 21<sub>1</sub> does not give the bonus to the user.

[0048]       From the viewpoint of the bonus being awarded ~~awarded~~ only to the users visiting the shop due to the shop details *INshop1*,  
20 it is more preferable for the CPU 21<sub>1</sub> to go through sequence SQ23 only when the external bonus identifier *IDbonus*" is the same as the internal bonus identifier *IDbonus'*.

[0049]       As such, in the data transmission system *Sdt*<sub>1</sub>, the bonus-attached file *Fbonus1* includes a bonus identifier *IDbonus*,  
25 which is stored in sequence SQ6 into the data terminal equipment



2<sub>1</sub> on the shop side as the internal bonus identifier *IDbonus'*,  
and stored in sequence SQ17 into the user's data terminal equipment  
3<sub>1</sub> as the external bonus identifier *IDbonus''*. When the user visits  
the shop, the data terminal equipment 2<sub>1</sub> receives the external  
5 bonus identifier *IDbonus''* from the data terminal equipment 3<sub>1</sub>,  
and ~~if-determines-it~~ it is determined as being the same as the  
internal bonus identifier *IDbonus'* stored therein, gives the user  
the bonus in the bonus-attached file *Fbonus1*. Accordingly, the  
user has no more need to print out coupons, and in this respect,  
10 the data transmission system *Sdt*<sub>1</sub> realizes better usability than  
the conventional system.

[0050] Note that, in the first embodiment, the bonus is  
exemplified by 20% OFF on meal charges. This is not restrictive,  
and the bonus may be points to be provided according to the amount  
15 of charge. In such a case, the data terminal equipment 2<sub>1</sub> or 3<sub>1</sub>  
calculates the user's points in total, and the shop correspondingly  
provides the user with gifts or service. Such a point service  
is also applicable to the second and third embodiments ~~in the~~ below.

[0051] In the first embodiment, the bonus-attached file *Fbonus1*  
20 is specifically for a pub. However, any other shops and facilities  
~~whichever~~ that the user can visit are surely possible to be included  
in the bonus-attached file *Fbonus1*.

[0052] Here, the bonus-attached file *Fbonus1* may be assigned  
with at least a bonus and the corresponding bonus identifier *IDbonus*,  
25 by which the location where the bonus is available is indicated.

The bonus-attached file *Fbonus1* may also include some other types of information. For example, if the bonus-attached file *Fbonus1* is ~~the one~~ for a boutique, any information relating to sales to be held thereat may be additionally included, or for a vacationland, any information about their event schedule, and if for any user gathering facilities such as movie theaters, any information about the crowding level or the waiting time. Also, the bonus-attached file *Fbonus1* may include menu information or bonuses of any specific celebrity's favorite restaurants, or sale information or bonuses of any specific boutiques. This is also applicable to the second and third embodiments ~~in the~~ below.

[0053] In the first embodiment, the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> exemplarily perform data communications using the wireless transmission path 5<sub>1</sub>. This is not restrictive, and a wired transmission path, e.g., USB (Universal Serial Bus) cable, may be used for ~~the~~ this purpose. Alternatively, the Internet 4<sub>1</sub> may be used for data communications of FIG. 8 between the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub>. This is also applicable to the second and third embodiments below.

20 [0054] ~~In the above~~ Above, the data terminal equipment 3<sub>1</sub> exchanges the external bonus identifier *IDbonus*" with the data terminal equipment 2<sub>1</sub> through the wireless transmission path 5<sub>1</sub> (sequences SQ21 and SQ22 of FIG. 8). Alternatively, the following manner is also possible for such an exchange. That is, the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> are each provided with a card memory

slot of the same standard. Here, the card memory is typified by an SD Card™, Smartmedia™, or a MemoryStick™. The data terminal equipment 3<sub>1</sub> uses the card memory ~~whichever~~ that is inserted into its slot as the bonus identifier storage 36<sub>1</sub>, in which the external bonus identifier *IDbonus* is stored. Such a card memory is extracted from the slot on the data terminal equipment 3<sub>1</sub> in the shop, and inserted into the slot on the data terminal equipment 2<sub>1</sub>. After the card memory is inserted into the slot on the data terminal equipment 2<sub>1</sub>, the CPU 21<sub>1</sub> responsively reads from the memory the external bonus identifier *IDbonus* to the RAM 23<sub>1</sub>. This is also applicable to the second and third embodiments ~~in the~~ below.

[0055] In the first embodiment, the WWW server 1<sub>1</sub> exemplarily performs data communications with the data terminal equipment 2<sub>1</sub> and 3<sub>1</sub> over the Internet 4<sub>1</sub> (see FIGS. 6 and 7). However, any other ~~networks~~ networks, such as a LAN (Local Area Network) Network, may be used for the data communications. That is, the bonus-attached file *Fbonus1* may be stored not only in the WWW server ~~1<sub>1</sub>~~, but in any different type of servers. This is also applicable to the second and third embodiments ~~in the~~ below.

[0056] Also, in the above, the WWW server 1<sub>1</sub> exemplarily stores the bonus-attached file *Fbonus1*. However, the data terminal equipment 2<sub>1</sub> may be provided with a function of the WWW server 1<sub>1</sub> for storing and transmitting the bonus-attached file *Fbonus1* to the data terminal equipment 3<sub>1</sub>. This is also applicable to the second and third embodiments ~~in the~~ below.

[0057] In the first embodiment, a single data terminal equipment 2<sub>1</sub> is presumed for convenience to perform both data communications of FIGS. 6 and 8. This is not restrictive, and two of the data terminal equipment 2<sub>1</sub> physically ~~differed~~ differing from each other  
5 may be provided, and one may be in charge of data communications of FIG. 6, and the other data communications of FIG. 8.

[0058] In the above, included in the bonus-attached file *Fbonus1* is exemplarily a bonus and a bonus identifier *IDbonus* specifying the bonus. However, the bonus-attached file *Fbonus1* may include  
10 a plurality of bonuses, and a plurality of bonus identifiers *IDbonus* ~~for each~~ for uniquely specifying the bonuses. Here, if included in the bonus-attached file *Fbonus1* is a single bonus, a URL may be used as the bonus identifier *IDbonus* because the bonus-attached file *Fbonus1* and the bonus uniquely correspond to each other. This  
15 is also applicable to the second and third embodiments ~~in the below~~.

[0059] In the above first embodiment, the bonus-attached file *Fbonus1* is created by the WWW server 1<sub>1</sub> using the items *IT* forwarded from the data terminal equipment 2<sub>1</sub>. Alternatively, the bonus-attached file *Fbonus1* may be created as below. That is,  
20 the shopkeeper may create a draft of the shop details *INshop1* for his or her shop, and passes it to the information provider. Based on the draft, the information provider creates the bonus-attached file *Fbonus1* representing the shop details *INshop1* using a personal computer, for example, and uploads it to their WWW server 1<sub>1</sub>. In  
25 this case, there is no need for data communications as shown in

FIG. 6. Further, the shopkeeper hands the draft directly to the information provider not over the Internet 4<sub>1</sub>, and as a result, the shopkeeper operates the data terminal equipment 2<sub>1</sub> less often. This is also applicable to the second and third embodiments—~~in~~  
5 ~~the~~ below.

[0060] In the case where the bonus-attached file *Fbonus1* is created as above, the bonus identifier *IDbonus* is stored in the data terminal equipment 2<sub>1</sub> in the following three manners. In the first manner, the shopkeeper specifies a bonus identifier  
10 *IDbonus* when passing the draft of the shop details *INshop1* to the information provider. In response to the shopkeeper's operation, the data terminal equipment 2<sub>1</sub> stores thus specified bonus identifier *IDbonus* into the bonus identifier storage 26<sub>1</sub>.

In the second manner, the information provider allocates  
15 a bonus identifier *IDbonus* when creating the bonus-attached file *Fbonus1*, and notifies the shopkeeper of the bonus identifier *IDbonus*—~~to the shopkeeper~~ typically by an e-mail. In response to the shopkeeper's operation, the data terminal equipment 2<sub>1</sub> stores thus notified bonus identifier *IDbonus* in the bonus identifier  
20 storage 26<sub>1</sub>.

In the third manner, the information provider allocates the bonus identifier *IDbonus* when creating the bonus-attached file *Fbonus1*. Because the bonus-attached file *Fbonus1* indicates the bonus identifier *IDbonus* as already described, if the  
25 bonus-attached file *Fbonus1* has been uploaded, the shopkeeper

operates the data terminal equipment 2<sub>1</sub> to browse the bonus-attached file *Fbonus1* for the shop details *INshop1*, and derives the bonus identifier *IDbonus* therefrom. Responding to the shopkeeper's operation, the data terminal equipment 2<sub>1</sub> then stores thus derived  
5 bonus identifier *IDbonus* in the bonus identifier storage 26<sub>1</sub>.

[0061] Described next is a data transmission system *Sdt1'* as a modified example of the first embodiment. The data transmission system *Sdt1'* is different from the data transmission system *Sdt1* in the respect that the WWW server 1<sub>1</sub> does not include the form  
10 data storage 14<sub>1</sub>, and performed therein is not data communications of ~~FIG. 6~~ FIG. 6, but that of FIG. 10. These are the only differences therebetween, and thus FIGS. 1 to 5, and FIGS. 7 to 9 are referred to for description ~~in the~~ below.

[0062] Prior to data communications of FIG. 10, the shopkeeper  
15 has the information provider allocated a storage location of the bonus-attached file storage 15<sub>1</sub> in the WWW server 1<sub>1</sub>. At this time, the shopkeeper is notified of the homepage directory of the second URL, which is described ~~in the~~ above. Here, the homepage directory is the one determined by the information provider, and specifies  
20 the storage location allocated to the shopkeeper.

[0063] In FIG. 10, the shopkeeper creates the bonus-attached file *Fbonus1* for his or her shop through operation of the data terminal equipment 2<sub>1</sub>, and uploads it to the WWW server 1<sub>1</sub>. At this time, the CPU 21<sub>1</sub> executes a process written in the program  
25 *Psdte* responding to the shopkeeper's operation. In detail, the

CPU 21<sub>1</sub> creates the bonus-attached file *Fbonus1* for the shop details *INshop1* (see FIG. 3B) in response to the shopkeeper's operation (sequence SQ25). In more detail, the CPU 21<sub>1</sub> arranges on the RAM 23<sub>1</sub> the items *ITname*, *ITinfo*, *ITcob*, and *ITiob* on the background  
5 (see the first embodiment for details), creating the bonus-attached file *Fbonus1* for the shop details *INshop1*.

[0064] The CPU 21<sub>1</sub> then stores thus inputted bonus identifier *IDbonus* (item *ITiob* used in sequence SQ25) on the RAM 23<sub>1</sub> into the bonus identifier storage 26<sub>1</sub> as the internal bonus identifier  
10 *IDbonus'* (sequence SQ26). Here, the timing for sequence SQ26 is not restrictive as long as it is carried out after sequence SQ25, and before the data terminal equipment 3<sub>1</sub> requests—~~for~~ the bonus-attached file *Fbonus1* (see sequence SQ14 of FIG. 7).

[0065] Next, the CPU 21<sub>1</sub> accesses the WWW server 1<sub>1</sub> responding  
15 to the shopkeeper's operation to upload thereto the bonus-attached file *Fbonus1* created in sequence SQ25 (sequence SQ28). More specifically, the shopkeeper adds his or her preferred file name to the homepage directory notified by the information provider through operation of the input unit 24<sub>1</sub>, and specifies the second  
20 URL for the bonus-attached file *Fbonus1* to be uploaded. The CPU 21<sub>1</sub> transfers the bonus-attached file *Fbonus1* on the RAM 23<sub>1</sub> and the specified second URL to the first communications controller 27<sub>1</sub>, from which the received bonus-attached file *Fbonus1* and the second URL are sent out onto the Internet 4<sub>1</sub>.

25 [0066] The bonus-attached file *Fbonus1* and the second URL are

forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>1</sub>, and then transferred to the RAM 13<sub>1</sub>. After the bonus-attached file *Fbonus1* is stored in the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> executes a process written in the program *Psrvr*. The CPU 11<sub>1</sub> then stores the bonus-attached file *Fbonus1* on the RAM 13<sub>1</sub> into the storage location of the bonus-attached file storage 15<sub>1</sub> specified by the second URL on the RAM 13<sub>1</sub> (Sequence SQ29). As a result, the bonus-attached file *Fbonus1* becomes available for the data terminal equipment 3<sub>1</sub> to request.

10   **[0067]**   After creating the same storage completion acknowledgement *ASsc1* as in the first embodiment, the CPU 11<sub>1</sub> transfers it to the communications controller 16<sub>1</sub>, from which thus received storage completion acknowledgement *ASsc1* is sent out onto the Internet 4<sub>1</sub> (sequence SQ30).

15           The storage completion acknowledge *ASsc1* is forwarded over the Internet 4<sub>1</sub> to the first communications controller 27<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> then transfers the storage completion acknowledgement *ASsc1* thus stored in the RAM 23<sub>1</sub> to the output unit 25<sub>1</sub>. The output unit 25<sub>1</sub> then goes through a display process in accordance with the received storage completion acknowledgement *ASsc1*, and displays on its screen a message included therein (sequence SQ31). With the message, the shopkeeper can acknowledge that the bonus-attached file *Fbonus1* is now stored in the WWW server 1<sub>1</sub>. Then, the CPU 21<sub>1</sub> cuts off access to the Internet 4<sub>1</sub> (sequence

20           

25



SQ32). Thereafter, data communications of FIGS. 7 and 8 is carried out.

[0068] As such, in this modified example, the shopkeeper can create freely the bonus-attached file *Fbonus1* to suit his or her preferences only by being allocated with the homepage directory (i.e., storage location of the bonus-attached file storage 15<sub>1</sub>) by the information provider.

[0069] Described next is a data transmission system *Sdt*<sub>2</sub> according to the second embodiment of the present invention. FIG. 11 is a block diagram showing the structure of the data transmission system *Sdt*<sub>2</sub>. The data transmission system *Sdt*<sub>2</sub> roughly includes the WWW server 1<sub>1</sub> which is the same as in the first embodiment, data terminal equipment 2<sub>2</sub> and 3<sub>2</sub>, and a center station 6<sub>2</sub>. The WWW server 1<sub>1</sub> and the data terminal equipment 2<sub>2</sub> and 3<sub>2</sub> are so structured as to be accessible to the Internet 4<sub>1</sub>, which is the same as in the first embodiment. With such a structure, the WWW server 1<sub>1</sub> at least can perform data communications with the data terminal equipment 2<sub>2</sub> and 3<sub>2</sub> over the Internet 4<sub>1</sub>. The data terminal equipment 2<sub>2</sub> and 3<sub>2</sub> can perform data communications over the wireless transmission path 5<sub>1</sub>, which is the same as in the first embodiment. Also, the data terminal equipment 2<sub>2</sub> can perform data communications with the center station 6<sub>2</sub> over a wired or wireless transmission path 7<sub>2</sub>. Here, the transmission path 7<sub>2</sub> is either a public line or a leased line.

[0070] The data terminal equipment 2<sub>2</sub> is an information device

which is, as is the data terminal equipment 2<sub>1</sub>, placed on the shop side, and operated by the shopkeeper. FIG. 12 shows the structure thereof. Compared with the data terminal equipment 2<sub>1</sub> of FIG. 4, the data terminal equipment 2<sub>2</sub> of FIG. 12 further includes a  
5 | third communications controller—~~29<sub>2</sub>~~ 29<sub>1</sub>. This is the only structural difference, and thus any constituent of FIG. 12 identical to that of FIG. 4 is provided with the same reference numeral, and not described again. In accordance with the transmission protocol for the transmission path 7<sub>2</sub>, the third  
10 | communications controller—~~29<sub>3</sub>~~ 29<sub>1</sub> sends out various data transferred from the RAM 23<sub>1</sub> to the transmission path 7<sub>2</sub>, or receives various data transmitted over the transmission path 7<sub>2</sub> and transfers the data to the RAM 23<sub>1</sub>.

[0071] Similar to the data terminal equipment 3<sub>1</sub>, the data  
15 | terminal equipment 3<sub>2</sub> is an information device structured as to be carried along by the user, the structure of which is shown in FIG. 13. Compared with the data terminal equipment 3<sub>1</sub> of FIG. 5, the data terminal equipment 3<sub>2</sub> of FIG. 13 further includes a personal data storage 39<sub>2</sub>. This is the only structural difference  
20 | therebetween, and thus any constituent of FIG. 13 identical to that of FIG. 5 is provided with the same reference numeral, and not described again. The personal data storage 39<sub>2</sub> stores the user's personal data *D<sub>user</sub>*. Herein, the personal data *D<sub>user</sub>* is presumably composed of the user's credit card number, and the valid  
25 | date of the credit card.

[0072] The center station 6<sub>2</sub> is managed by a credit card provider, and performs a billing process with respect to the user. The center station 6<sub>2</sub> includes, as shown in FIG. 14A, a CPU 61<sub>2</sub>, ROM 62<sub>2</sub>, RAM 63<sub>2</sub>, a personal database storage 64<sub>2</sub>, and a communications controller 65<sub>2</sub>. The CPU 61<sub>1</sub> executes various processes by following a computer program *Pss* which is previously recorded on the ROM 62<sub>2</sub>. When executing the computer program *Pss*, the CPU 61<sub>1</sub> uses the RAM 63<sub>2</sub> as a working area. The personal database storage 64<sub>2</sub> is typically composed of a hard disk drive, and stores therein a personal database *DBuser* (see FIG. 14B). In accordance with the transmission protocol for the transmission path 7<sub>2</sub>, the communications controller 65<sub>2</sub> sends out various data transferred from the RAM 63<sub>2</sub> to the transmission path 7<sub>2</sub>, or receives various data transmitted over the transmission path 7<sub>2</sub> and transfers the data to the RAM 63<sub>2</sub>.

[0073] The personal database *DBuser* stores personal data *Duser* and status data *Dstat* for every user under contract to the credit card provider. As a specific example, the personal database *DBuser* is composed of, as shown in FIG. 14B, a plurality of unit records *Runit21*, each of which represents a user's status report of his or her credit card. The record unit *Runit21* includes both the personal data *Duser* and the status data *Dstat*. Specifically, the personal data *Duser* is, as already described, composed of the user's credit card number and its valid date. The status data *Dstat* at least includes the date when the user used the credit card, the

shop name where the user used the credit card, and the user's amount of charge (charged amount *Cdisc* or *Cnoml*, which will be later described).

[0074] Described next is data communications performed in the data transmission system *Sdt<sub>2</sub>*. Data communications between the WWW server *1<sub>1</sub>* and the data terminal equipment *2<sub>2</sub>* is the same as that of FIG. 6, and not described here. Also, data communications between the WWW server *1<sub>1</sub>* and the data terminal equipment *3<sub>2</sub>* is the same as that of FIG. 7, and not described here either.

10 [0075] After sequence SQ18 of FIG. 7, the user goes to the target shop with the data terminal equipment *3<sub>2</sub>* to get services from the shop, make purchases thereat, and receive the corresponding bonus. In the target shop, data communications as shown in FIGS. 15 and 16 ~~is~~ are performed among the data terminal equipment *2<sub>2</sub>* and *3<sub>2</sub>*,  
15 and the center station *6<sub>2</sub>*.

[0076] In FIG. 15, the CPU *21<sub>1</sub>* in the data terminal equipment *2<sub>2</sub>* executes a process written in the program *Psdte* responding to the shopkeeper's operation. More specifically, the CPU *21<sub>1</sub>* establishes a connection with the data terminal equipment *3<sub>2</sub>* (sequence SQ33). After such a connection establishment, the CPU *31<sub>1</sub>* on the data terminal equipment *3<sub>2</sub>* side executes a process written in the program *Pudte*.

20

[0077] The CPU *21<sub>1</sub>* generates a request *RSiau* on the RAM *33<sub>1</sub>*, and transfers it to the second communications controller *28<sub>1</sub>*. Here,  
25 the request *RSiau* is a signal for requesting the data terminal

equipment 3<sub>2</sub> to transmit the external bonus identifier *IDbonus*" and the personal data *Duser* to the data terminal equipment 2<sub>2</sub>. The second communications controller 28<sub>1</sub> then sends out the received request *RSiau* onto the wireless transmission path 5<sub>1</sub>. In such  
5 a manner, a request is made for the bonus identifier and the personal data (sequence SQ34).

[0078] The request *RSiau* is forwarded over the wireless transmission path 5<sub>1</sub> to the second communications controller 38<sub>1</sub> in the data terminal equipment 3<sub>2</sub>, and then transferred to the  
10 RAM 33<sub>1</sub>. After the request *RSiau* is stored in the RAM 33<sub>1</sub>, the CPU 31<sub>1</sub> reads the external bonus identifier *IDbonus*" from the bonus identifier storage 36<sub>1</sub> onto the RAM 33<sub>1</sub>. The CPU 31<sub>1</sub> also reads the personal data *Duser* from the personal data storage 39<sub>2</sub> onto the RAM 33<sub>1</sub>. Then, the CPU 31<sub>1</sub> transfers, to the second  
15 communications controller 38<sub>1</sub>, the external bonus identifier *IDbonus*" and the personal data *Duser* on the RAM 33<sub>1</sub>. The second communications controller 38<sub>1</sub> sends out thus received external bonus identifier *IDbonus*" and the personal data *Duser* onto the wireless transmission path 5<sub>1</sub> (sequence SQ35).

20 [0079] The external bonus identifier *IDbonus*" and the personal data *Duser* are forwarded over the wireless transmission path 5<sub>1</sub> to the second communications controller 28<sub>1</sub> in the data terminal equipment 2<sub>2</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> also reads out the internal bonus identifier *IDbonus*' from the  
25 bonus identifier storage 26<sub>1</sub> onto the RAM 23<sub>1</sub>. Here, the timing

for reading the internal bonus identifier *IDbonus'* is not restrictive as long as it is ~~between~~ after sequence SQ33 and before sequence SQ36. In such a manner, the RAM 23<sub>1</sub> stores the personal data *Duser*, and the internal and external bonus identifiers *IDbonus'* and *IDbonus''*. Next, the CPU 21<sub>1</sub> determines whether the external bonus identifier *IDbonus''* is the same as the internal bonus identifier *IDbonus'* (sequence SQ36).

[0080] If the external bonus identifier *IDbonus''* is the same as the internal bonus identifier *IDbonus'*, the CPU 21<sub>1</sub> determines that the user is the one visiting the shop due to the shop details *INshop1*, and the procedure goes to sequence SQ37. Then, the CPU 21<sub>1</sub> executes a process of awarding the bonus to the user (sequence SQ37). Herein, similar to the first embodiment, the user is assumed as visiting the shop due to the shop details *INshop1* of FIG. 3B, and the external bonus identifier *IDbonus''* stored in the data terminal equipment 3<sub>1</sub> is yyyy. Also, the target shop is assumed as being the one found in the shop details *INshop1* of FIG. 3B similar to the first embodiment, and thus the internal bonus identifier *IDbonus'* stored in the data terminal equipment 2<sub>2</sub> is also yyyy. Accordingly, the user gets a bonus of 20% OFF on meal charges. In sequence SQ37, specifically, the CPU 21<sub>1</sub> calculates the resultant 20% deducted amount of charge, i.e., charge amount *Cdisc*. The CPU 21<sub>1</sub> then creates, on the RAM 23<sub>1</sub>, the status data *Dstat* including thus calculated charge amount *Cdisc*, the date, i.e., when the credit card is used, and the shop name. Here, the shop name is assumed

to be previously registered in the data terminal equipment 2<sub>2</sub>.

Preferably, the CPU 21<sub>1</sub> has the output unit 25<sub>1</sub> ~~displayed~~ display the charge amount *Cdisc* for the user.

After sequence SQ37 is through, the CPU 21<sub>1</sub> cuts off  
5 the connection with the data terminal equipment 3<sub>2</sub> (sequence SQ38).

[0081] In sequence SQ37, if the CPU 21<sub>1</sub> determines that the external bonus identifier *IDbonus*" is not the same as the internal bonus identifier *IDbonus'*, the procedure goes to sequence SQ39 of FIG. 16. In sequence SQ39, the CPU 21<sub>1</sub> executes a process of  
10 not giving the user the bonus, which is 20% OFF on meal charges in the above example. In such a case, the CPU 21<sub>1</sub> makes no discount on the user's meal charges in sequence SQ39, and the resultant amount charge is derived as the charge amount *Cnoml*. The CPU 21<sub>1</sub> then creates, on the RAM 23<sub>1</sub>, the status data *Dstat* including thus  
15 calculated charge amount *Cnoml*, the date, i.e., when the credit card is used, and the shop name. Preferably, the CPU 21<sub>1</sub> has the output unit 25<sub>1</sub> displayed the charge amount *Cnoml*.

After sequence SQ37 is through, the CPU 21<sub>1</sub> cuts off the connection with the data terminal equipment 3<sub>2</sub> (sequence SQ38).

20 [0082] After sequence SQ38 is through, the CPU 21<sub>1</sub> establishes a connection with the center station 6<sub>2</sub> (sequence SQ39). After such a connection establishment, the CPU 61<sub>2</sub> on the center station 6<sub>2</sub> side executes a process written in the computer program *Pss*.

25 After sequence SQ39, the CPU 21<sub>1</sub> transfers, to the third

communications controller-29<sub>2</sub>29<sub>1</sub>, the set of the personal data *Duser* and the status data *Dstat* on the RAM 23<sub>1</sub>. The third communications controller-29<sub>2</sub>29<sub>1</sub> sends out thus received set onto the transmission path 7<sub>2</sub> (sequence SQ40).

5   **[0083]**     The set of the personal data *Duser* and the status data *Dstat* is forwarded over the transmission path 7<sub>2</sub> to the communications controller 65<sub>2</sub> in the center station 6<sub>2</sub>, and then transferred to the RAM 63<sub>2</sub>. Then, the CPU 61<sub>1</sub> performs a billing process (sequence SQ41). More specifically, the CPU 61<sub>2</sub> searches  
10   the personal database *DBuser* in the personal database storage 64<sub>2</sub> for any unit record *Runit* (hereinafter, referred to as a target unit record *Runit'*) including the same personal data *Duser* on the RAM 63<sub>2</sub>. Once found the target unit record *Runit'*, the CPU 61<sub>1</sub> fills the unit record *Runit'* with the charge amount *Cdics* (or *Cnoml*),  
15   the date, and the shop name included in the status data *Dstat* on the RAM 63<sub>2</sub>. This is the end of the billing process.

**[0084]**     After the billing process (sequence SQ41) is correctly through, the CPU 61<sub>2</sub> generates, on the RAM 63<sub>2</sub>, a billing completion acknowledgement *ASchar* to indicate as such, and transfers it to  
20   the communications controller 65<sub>2</sub>. The communications controller 65<sub>2</sub> sends out thus received billing completion acknowledgement *ASchar* onto the transmission path 7<sub>2</sub> (sequence SQ42).

**[0085]**     The billing completion acknowledgement *ASchar* is forwarded over the transmission path 7<sub>2</sub> to the third communications  
25   controller-29<sub>2</sub>29<sub>1</sub> in the data terminal equipment 2<sub>2</sub>, and then



transferred to the RAM 23<sub>1</sub>. Then, the CPU 21<sub>1</sub> preferably goes through a process of issuing the bill (sequence SQ43), and the bill is handed to the user at the shop. After sequence SQ43, the CPU 21<sub>1</sub> cuts off the connection with the center station 6<sub>2</sub> (sequence  
5 SQ44).

[0086] On the other hand, if the billing process (sequence SQ41) ~~is failed~~ fails to be correctly completed, the CPU 61<sub>2</sub> generates, on the RAM 63<sub>2</sub>, an incompleteness acknowledgement indicating as such, and forwards it to the data terminal equipment 2<sub>2</sub> via the  
10 communications controller 65<sub>2</sub> and the transmission path 7<sub>2</sub>. In response, the data terminal equipment 2<sub>2</sub> cancels all of the sequences so far carried out. As to such a case where the billing process (sequence SQ41) is not correctly through, no further description is given here as it is not the scope of the present  
15 embodiment.

[0087] The credit card provider charges the user based on the unit record *Runit* recorded on the personal database *DBuser*.

[0088] As described above, with the data transmission system *Sdt*<sub>2</sub>, the user can receive the bonus from the target shop as with  
20 the data transmission system *Sdt*<sub>1</sub>. Moreover, with the personal data *Duser* previously stored in the data terminal equipment 3<sub>2</sub>, the user can receive services from the shop or make purchases thereat with no cash payment. In this sense, the data transmission system *Sdt*<sub>2</sub> has better usability.

25 [0089] Also in the second embodiment, the bonus may be points

given to the user according to his or her meal charges. In this case, the data terminal equipment  $2_2$  or  $3_2$  calculates the user's points in total, and correspondingly provides the user with gifts or services. In the case where such a point service is the bonus, with no discount on the user's meal charges in sequence SQ37, the CPU  $21_1$  calculates the charge amount  $Cnom1$ , and the corresponding points are provided to the user. On the other hand, if the CPU  $21_1$  calculates the charge amount  $Cnom1$  in sequence SQ39, no point is provided to the user.

10 [0090] In the second embodiment, a single data terminal equipment  $2_2$  is presumed for convenience to perform all of data communications of FIGS. 6, 15, and 16. This is not restrictive, and two of the data terminal equipment  $2_2$  physically differed from each other may be provided, and one may be in charge of data communications of FIG. 6, and the other data communications of FIGS. 15 and 16.

[0091] In the above, the data terminal equipment  $3_2$  stores the user's credit card number and its valid date as the personal data  $Duser$ , and is provided with a function as credit cards. This is not restrictive, and the data terminal equipment  $3_2$  may store the user's bank account number and ~~its~~ PIN (Personal Identification Number), and be provided with a function as debit cards.

[0092] Described next is a data transmission system  $Sdt_3$  according to the third embodiment of the present invention. FIG. 17 is a block diagram showing the structure of the data transmission

system  $Sdt_3$ , which roughly includes a WWW server  $1_3$ , the same data terminal equipment  $2_1$  as in the first embodiment, and data terminal equipment  $3_3$ . Herein, the WWW server  $1_3$ , and the data terminal equipment  $2_1$  and  $3_3$  are so structured as to be accessible to the Internet  $4_1$ , which is the same as in the first embodiment. With such a structure, at least the WWW server  $1_3$  can perform data communications with the data terminal equipment  $2_1$  and  $3_3$  over the Internet  $4_1$ . Moreover, the data terminal equipment  $2_1$  and  $3_3$  can perform data communications therebetween over the wireless transmission path  $5_1$ , which is the same as in the first embodiment.

[0093] FIG. 18 shows the structure of the WWW server  $1_3$ , which is managed by an information provider. Here, the information provider is the one who stores a bonus-attached file  $Fbonus3$  (see FIG. 20B) in the WWW server  $1_3$  responding to a request from the shop, and by using the bonus-attached file  ~~$Fbonus3$~~   $Fbonus3$ , provides the shop details to the user. Here, compared with the WWW server  $1_1$  of FIG. 2, the WWW server  $1_3$  of FIG. 18 includes a form data storage  $14_3$ , a bonus-attached file storage  $15_3$ , and a conversion table storage  $17_3$  as alternatives to the form data storage  $14_1$ , and the bonus-attached file storage  $15_1$ . These are the only structural differences therebetween, and thus any constituent of FIG. 18 identical to that of FIG. 2 is provided with the same reference numeral, and not described again.

[0094] The form data storage  $14_3$  is typically composed of a hard disk drive, and stores form data  $Dform3$  in a storage location

specified by a predetermined first URL (Uniform Resource Locator). With the form data *Dform3*, such an input form *Fin3* as shown in FIG. 19A can be displayed at least by the data terminal equipment 2<sub>3</sub>. The input form *Fin3* is so structured as to allow the shopkeeper using the data terminal equipment 2<sub>3</sub> to fill out items *IT*, which are needed to create the bonus-attached file *Fbonus3*. As to the items ~~*IT*~~, *IT* to be filled out in the present-~~embodiment~~ embodiment, there are three of these *ITname*, *ITaddr*, and *ITnote* selected by the information provider. Specifically, the item *ITname* is a shop name, and the item *ITaddr* is a shop address. The item *ITnote* is details of a bonus, which denotes herein a merit awarded specially to the user who becomes the customer of the shop. With these three items *IT* selected, the input form *Fin3* is structured by three input columns *Cname*, *Caddr*, and *Cnote*. The shopkeeper using the data terminal equipment 2<sub>3</sub> fills out those input columns *Cname*, *Caddr*, and *Cnote* with, respectively, a shop name (item *ITname*), a shop address (item *ITaddr*), and bonus details (item *ITnote*).

[0095] The input form *Fin3* has a transmission button *Btx3*, a function assigned to which is of transmitting the items *ITname*, *ITaddr*, and *ITnote* filled out in the input columns *Cname*, *Caddr*, and *Cnote* to the WWW server 1<sub>3</sub>. The transmission button *Btx3* is clicked by the shopkeeper using the data terminal equipment 2<sub>3</sub>. When the transmission button *Btx3* is clicked, the data terminal equipment 2<sub>3</sub> responsively transmits, to the WWW server 1<sub>3</sub>, item data *Ditem3* (see sequence SQ44 of FIG. 23) including those inputted

items *ITname*, *ITaddr*, and *ITnote*.

[0096] The bonus-attached file storage 15<sub>3</sub> stores the bonus-attached file *Fbonus3* (see FIG. 20B) in a storage location specified by a predetermined second URL. The bonus-attached file storage 15<sub>3</sub> also stores a base file *Fbase3* in a predetermined storage location. The base file *Fbase3* represents the background of the bonus-attached file *Fbonus3*, and is used when the WWW server 1<sub>3</sub> creates the bonus-attached file *Fbonus3* (see sequence SQ46 of FIG. 23). Here, the base file *Fbase3* is used only by the WWW server 1<sub>3</sub>, and thus there is no need to assign a URL to the base file *Fbase3*.

[0097] The bonus-attached file *Fbonus3* is described in more detail. The bonus-attached file *Fbonus3* is created by the WWW server 1<sub>3</sub> using the item data *Ditem3* and base data *Fbase3* (see sequence SQ46 of FIG. 23). With the bonus-attached file *Fbonus3*, such shop details *INshop3* as shown in FIG. 20A can be displayed at least on the data terminal equipment 3<sub>3</sub> side. The bonus-attached file *Fbonus3* is written in POIX (Point Of Interest eXchange language). Details of the POIX are found, as of January 26, 2001, in <http://mostec.aplix.co.jp/poix.html> or <http://www.w3.org/TR/poix>, and thus only ~~any~~ elements relating to the bonus-attached file *Fbonus3* are ~~only~~ described here.

[0098] The bonus-attached file *Fbonus3* is indicated by an element *poi*, and roughly composed of a shop name (referred to as a target in POIX), a representative shop position, and shop details.

The shopname is indicated by an element *name*, and more specifically, written by a sub-element *nb*. The sub-element *nb* indicates the shop name in a specific form of `<nb> shop name </nb>`. The representative shop position is indicated by an element *point*, and more specifically, written by a sub-element *pos*. The sub-element *pos* indicates the representative shop position, which is defined by, at least, latitude and longitude. An element *lat* indicates the latitude of the representative shop position, in a specific form of `<lat>latitude</lat>`. An element *lon* indicates the longitude of the representative shop position, in a specific form of `<lon>longitude</lon>`. The shop details are indicated by an element *note*, and written by letter characters. The specific form of the element *note* is `<note>bonus details</note>`. In the present embodiment, the element *note* indicates in detail the bonus offered by the shop. Here, the element *note* may indicate the menu of the shop in addition to the bonus.

**[0099]** Assuming here is that the bonus-attached file *Fbonus3* includes such an element *poi* as shown in FIG. 20B, i.e., `<nb> pub X</nb>`, `<lat>35.50</lat>`, `<lon>135.75</lon>`, and `<note>20% OFF on meal charges</note>`. With such a bonus-attached file *Fbonus3*, displayed on the data terminal equipment 3<sub>3</sub> is the shop details *INshop3* of the pub X in FIG. 20A. Here, in the shop details *INshop3*, the representative shop position is at latitude 35.50°, and longitude 135.75°. However, for the user's easy understanding, the display shows the specific location of the pub X as its address

(see sequences SQ55 and SQ56 of FIG. 24). As the bonus for the user visiting the pub X due to the shop details *INshop3*, displayed is "20% OFF on meal charges".

[0100] The conversion table storage 17<sub>3</sub> has such a conversion table *Tconv31* as shown in FIG. 21A. Specifically, the conversion table *Tconv31* is composed of a plurality of unit records *Runit31*, which are created on the basis of shop address, i.e., for every item *ITaddr*. The unit records *Runit31* each include the shop address (item *ITaddr*), and the set of latitude and the longitude indicating the representative position of the shop. Such a conversion table *Tconv31* is used when the WWW server 1<sub>3</sub> creates the bonus-attached file *Fbonus3* (see sequence SQ46 of FIG. 23). Here, the conversion table *Tconv31* is used only by the WWW server 1<sub>3</sub>, and thus there is no need to assign a URL to the conversion table *Tconv31*.

15 [0101] ~~Refer~~Referring back to ~~FIG. 17.~~ The FIG. 17, the structure of the data terminal equipment 2<sub>1</sub> remains the same as described in the first embodiment, and thus is not described again.

The data terminal equipment 3<sub>3</sub> is an information device which is typically structured as to be carried along by the user, i.e., the potential customer of the shop, and is provided with a navigation function. Such data terminal equipment 3<sub>3</sub> is typified by portable navigation devices. FIG. 22 shows the structure of the data terminal equipment 3<sub>3</sub>. Compared with the data terminal equipment 3<sub>1</sub> of FIG. 5, the data terminal equipment 3<sub>3</sub> of FIG. 22 further includes, at least, a cartographic database storage

310<sub>3</sub>, a receiver 311<sub>3</sub>, and a conversion table storage 312<sub>3</sub>. These are the only structural differences therebetween, and thus any constituent of FIG. 22 identical to that of FIG. 5 is provided with the same reference numeral, and not described again.

5 [0102] The cartographic database storage 310<sub>3</sub> stores a cartographic database *DBcart*, which is composed of several cartographic files. To each of the cartographic files, assigned is a predetermined area which is defined by latitude and longitude. The cartographic files each include image data for representing  
10 the area assigned thereto, and road network data for representing the road connections in the assigned area. The road network data is, schematically, structured by nodes and links. The nodes specify characteristic points (any of intersections, or curving points on roads) in the road network, while the links each denote  
15 a road between any two characteristics points.

[0103] The receiver 311<sub>3</sub> is typically composed of a GPS (Global Positioning System) receiver, and calculates the position of the data terminal equipment 3<sub>3</sub> based on position information transmitted from artificial satellites. The calculation result  
20 by the receiver 311<sub>3</sub> is defined by latitude and longitude, and transmitted to the CPU ~~311<sub>1</sub>~~ 31<sub>1</sub>. Here, the GPS receiver is not restrictive to the receiver 311<sub>3</sub> as long as heteronomous navigation is realized thereby. Here, heteronomous navigation is an antonym of autonomous navigation, and means navigation by which the  
25 position of the data terminal equipment 3<sub>3</sub> being a mobile unit



can be derived based on the position information provided by any other positioning systems.

[0104] The conversion table storage 312<sub>3</sub> stores such a conversion table *Tconv32* as shown in FIG. 21B. Specifically, the conversion table *Tconv32* is composed of several of a unit record *Runit32*, which is created for every representative position *Ptypc* of FIG. 21A. The unit record *Runit32* includes the representative position *Ptypc*, and the shop address (item *ITaddr*). Such a conversion table *Tconv32* is used by the data terminal equipment 3<sub>3</sub> for creating display data *Ddisp* (see sequence SQ55 of FIG. 24).

[0105] Thus described above are the structural differences between the data transmission system *Sdt*<sub>1</sub> and the data transmission system *Sdt*<sub>3</sub>. By referring to FIGS. 23 and 24, described next is the differences between data communications in the data transmission system *Sdt*<sub>1</sub> and that in the data transmission system *Sdt*<sub>3</sub>.

[0106] Referring to FIG. 23, described first is data communications between the WWW server 1<sub>1</sub> and the data terminal equipment 2<sub>1</sub>. In FIG. 23, the shopkeeper operates the data terminal equipment 2<sub>1</sub> so as to request the information provider to create and store the bonus-attached file *Fbonus3* for his or her shop. At the time of such a request, the CPU 21<sub>1</sub> executes a process written in the program *Psdte* responding to the shopkeeper's operation. More specifically, the CPU 21<sub>1</sub> first accesses the Internet 4<sub>1</sub> (sequence SQ40).

[0107] Then, the shopkeeper enters a first URL through operation of the input unit 24<sub>1</sub>. The CPU 21<sub>1</sub> generates on the RAM 23<sub>1a</sub> a request *RSfd3* including the first URL, and transfers it to the first communications controller 27<sub>1</sub>. The request *RSfd3* is a signal for requesting the WWW server 1<sub>3</sub> to transmit the form data *Dform3* to the data terminal equipment 2<sub>1</sub>. The first communications controller 27<sub>1</sub> sends out the received request *RSfd3* onto the Internet 4<sub>1</sub>. As such, a request is made for the form data *Dform3* (sequence SQ41).

10 [0108] The request *RSfd3* is forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>3</sub>, and then transferred to the RAM 13<sub>1</sub>. After the request *RSfd3* is stored in the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> executes a process written in the program *Psrvr*. Specifically, the CPU 11<sub>1</sub> extracts the first URL from the request *RSfd3* on the RAM 13<sub>1</sub>, and then reads the form data *DForm3* from the storage location in the form data storage 14<sub>3</sub> which is specified by the first URL onto the RAM 13<sub>1</sub>. Then, the CPU 11<sub>1</sub> transfers the form data *Dform3* on the RAM 13<sub>1</sub> to the communications controller 16<sub>1</sub>, from which the form data *Dform3* is sent out onto the Internet 4<sub>1</sub> (sequence SQ42).

15 20 [0109] The form data *Dform3* is forwarded over the Internet 4<sub>1</sub> to the first communications controller 27<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> then transfers the form data *Dform3* on the RAM 23<sub>1</sub> to the output unit 25<sub>1</sub>. The output unit 25<sub>1</sub> then performs a display process in

accordance with the received form data *Dform3*, and displays on its screen such an input form *Fin3* as shown in FIG. 19A (sequence SQ43).

[0110] With the input form *Fin3* displayed, the shopkeeper fills, through operation of the input unit 24<sub>1</sub>, the input columns *Cnames*, *Caddr*, and *Cnote* with the shop name (item *ITname*), the shop address (item *ITaddr*), and the bonus details (item *ITnote*). As exemplarily shown in FIG. 19A, the shopkeeper herein presumably fills out the input column *Cname* with the shop name "pub X", the input column *Cadds* with his or her shop address, and the input column *Cnote* with "20% OFF on meal charges" as bonus details. After completely filling out the input form *Fin3* as such, the shopkeeper clicks the transmission button *Btx3* through the input unit 24<sub>1</sub>. Then, the CPU 21<sub>1</sub> creates on the RAM 23<sub>1</sub> the item data *Ditem3* including those inputted items *ITname*, *ITaddr*, and *ITnote* (sequence SQ44).

[0111] The CPU 21<sub>1</sub> then transfers the item data *Ditem3* on the RAM 23<sub>1</sub> to the first communications controller 27<sub>1</sub>, from which the item data *Ditm3* is sent out onto the Internet 4<sub>1</sub> (sequence SQ45). The item data *Ditem3* is forwarded over the Internet 4<sub>1</sub> to the communications controller 16<sub>1</sub> in the WWW server 1<sub>3</sub>, and then transferred to the RAM 13<sub>1</sub>.

[0112] After the item data *Ditem3* is stored in the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> creates the bonus-attached file *Fbonus3* (sequence SQ46). More in detail, the CPU 11<sub>1</sub> reads a base file *Fbase3* from the bonus-attached file storage 15<sub>3</sub> onto the RAM 13<sub>1</sub>. Then, the CPU

11<sub>1</sub> retrieves the item *ITname* (shop name) from the item data *Ditem3* on the RAM 13<sub>1</sub> so as to create <nb>shop name</nb> using the element *nb*. As to the item *ITnote* (bonus details), the CPU 11<sub>1</sub> creates <note>bonus details</note> in the similar manner. The CPU 11<sub>1</sub> then retrieves the item *ITaddr* from the item data *Ditem3* on the RAM 13<sub>1</sub>, and accesses to the conversion table *Tconv31* stored in the conversion table storage 17<sub>3</sub>. Then, the CPU 11<sub>1</sub> searches for the unit record *Runit31* including the retrieved item *ITaddr* (shop address), and from thus found unit record *Runit31*, reads the representative position *Ptypc* onto the RAM 13<sub>1</sub>. As to the latitude found in the representative position *Ptypc*, the CPU 11<sub>1</sub> creates <lat>latitude</lat> using the element *lat*. Similarly to the longitude found therein, ~~created is~~ <lon>longitude</lon> is created using the element *lon*.

15   **[0113]**     The CPU 11<sub>1</sub> then allocates thus created <nb>shop name</nb>, <note>bonus details</note>, <lat>latitude</lat>, and <lon>longitude</lon> each onto the predetermined position on the background represented by the base file *Fbase3*. In this manner, a bonus-attached file *Fbonus3* is created on the RAM 13<sub>1</sub>. After assigning the second URL to the bonus-attached file *Fbonus3* on the RAM 13<sub>1</sub>, the CPU 11<sub>1</sub> stores it in the storage location of the bonus-attached file storage 15<sub>3</sub> which is specified by the second URL (sequence SQ47). As a result, the bonus-attached file *Fbonus3* becomes available in sequence SQ53 of FIG. 24 for the user's data terminal equipment 3<sub>3</sub> to request.

[0114] After sequence SQ47 is through, the CPU 11<sub>1</sub> generates a storage completion acknowledgement ASsc3 including the second URL assigned to the current bonus-attached file *Fbonus3*, and transfers it to the communications controller 16<sub>1</sub>. Here, together  
5 with the second URL, the storage completion acknowledgement ASsc3 is a signal-~~including~~ also including a message telling that the bonus-attached file *Fbonus3* is now stored in the bonus-attached file storage 15<sub>3</sub>. The communications controller 16<sub>1</sub> sends out thus received storage completion acknowledgement ASsc3 onto the  
10 Internet 4<sub>1</sub> (sequence SQ48).

[0115] The storage completion acknowledgement ASsc3 is forwarded over the Internet 4<sub>1</sub> to the first communications controller 27<sub>1</sub> in the data terminal equipment 2<sub>1</sub>, and then transferred to the RAM 23<sub>1</sub>. The CPU 21<sub>1</sub> transfers the storage  
15 completion acknowledgement ASsc3 thus stored in the RAM 23<sub>1</sub> to the output unit 25<sub>1</sub>. The output unit 25<sub>1</sub> executes a display process in accordance with the received storage completion acknowledgement ASsc3, and then displays on its screen the message included in the storage completion acknowledgement ASsc3 (sequence SQ49).  
20 This ~~makes~~ acknowledges to the shopkeeper-~~acknowledge~~ that his or her request is now processed by the information provider, i.e., the WWW server 1<sub>3</sub>.

[0116] The CPU 21<sub>1</sub> then extracts the second URL from the storage completion acknowledgement ASsc3 on the RAM 23<sub>1</sub>, and stores it  
25 as the bonus identifier *IDbonus* in the bonus identifier storage

26<sub>1</sub> (sequence SQ50). The bonus identifier *IDbonus* is an identifier for uniquely identifying the bonus included in the bonus-attached file *Fbonus3*. Here, the bonus identifier *IDbonus* stored in sequence SQ50 is now referred to as an internal bonus identifier  
5 *IDbonus'*. The internal bonus identifier *IDbonus'* is used in sequence SQ22 of FIG. 8 which will be described below, and thus is not described in detail now. Here, the timing for sequence SQ50 is not restrictive as long as it is carried out after the storage completion acknowledgement *ASsc3* is stored in the RAM 23<sub>1</sub>,  
10 and before sequence SQ22.

After sequence SQ50, the CPU 21<sub>1</sub> cuts off the access to the Internet 4<sub>1</sub> (sequence SQ51).

[0117] In the above, sequences SQ40 to SQ51 are presumed to be gone through successively for convenience. This is not  
15 restrictive, and after sequence SQ45 is through, the CPU 21<sub>1</sub> may cut off access to the Internet 4<sub>1</sub> for a time. This is because, as described in the first embodiment, it may take time to create the bonus-attached file *Fbonus3*, and if so, the shopkeeper may  
| have to wait ~~long~~ a long time, and may be charged for extra  
20 communications expenses. If this is the case, the WWW server 1<sub>3</sub> preferably transmits an e-mail including the same message and the second URL as in the storage completion acknowledgement *ASsc3* to the data terminal equipment 2<sub>1</sub>. Thereby, the shopkeeper can read the message and know the second URL as the bonus identifier *IDbonus*  
25 whenever convenient, shortening waiting time and reducing

communications expenses.

[0118] Referring to FIG. 24, described next is data communications between the WWW server 1<sub>1</sub> and the data terminal equipment 3<sub>3</sub>. Through operation of data terminal equipment 3<sub>1</sub> 5 ~~carrying~~ carried along, the user browses the bonus-attached file *Fbonus3* on the WWW server 1<sub>1</sub>. During such browsing, the CPU 31<sub>1</sub> executes a process written in the program *Pudte* responding to the user's operation. More specifically, the CPU 31<sub>1</sub> accesses the Internet 4<sub>1</sub> (sequence SQ52).

10 [0119] Then, the user operates the input unit 34<sub>1</sub> to enter the second URL. The CPU 31<sub>1</sub> generates on the RAM 33<sub>1</sub> a request *RSsd3* including the second URL, and transfers it to the first communications controller 37<sub>1</sub>. Here, the request *RSsd3* is a signal for requesting the WWW server 1<sub>1</sub> to forward the bonus-attached 15 file *Fbonus3* to the data terminal equipment 3<sub>3</sub>. The first communications controller 37<sub>1</sub> sends out the received request *RSsd3* onto the Internet 4<sub>1</sub>. As such, a request is made for the bonus-attached file *Fbonus3* (sequence SQ53).

[0120] The request *RSsd3* is then stores in the RAM 13<sub>1</sub> via 20 the communications controller 16<sub>1</sub> in the WWW server 1<sub>1</sub>. In response, the CPU 11<sub>1</sub> reads the bonus-attached file *Fbonus3* from the storage location of the bonus-attached file storage 15<sub>3</sub>, and transfers it to the communications controller 16<sub>1</sub>. Here, the storage location in the bonus-attached file storage 15<sub>3</sub> is specified by 25 the second URL in the request *RSsd3*. The communications controller

16<sub>1</sub> sends out the received bonus-attached file *Fbonus3* onto the Internet 4<sub>1</sub> (sequence SQ54).

[0121] The bonus-attached file *Fbonus3* is stored in the RAM 33<sub>1</sub> via the Internet 4<sub>1</sub>, and the first communications controller 37<sub>1</sub> in the data terminal equipment 3<sub>3</sub>. Then, based on the bonus-attached file *Fbonus3* on the RAM 33<sub>1</sub>, the CPU 31<sub>1</sub> creates display data *Ddisp* (sequence SQ55). More specifically, the CPU 31<sub>1</sub> extracts the representative position *Ptypc* from the bonus-attached file *Fbonus3* on the RAM 33<sub>1</sub>, and accesses to the conversion table *Tconv32* (see FIG. 21B) stored in the conversion table storage 312<sub>3</sub>. ~~Then~~ Then, the CPU 31<sub>1</sub> searches for the unit record *Runit32* including thus extracted representative position *Ptypc* (latitude and longitude), and from the found unit record *Runit32*, reads the shop address (item *ITaddr*) onto the RAM 13<sub>1</sub>. The CPU 11<sub>1</sub> then replaces <lat>latitude</lat> and <lon>longitude</lon> in the bonus-attached file *Fbonus3* with the shop address (item *ITaddr*), whereby a single piece of display data *Ddisp* is created on the RAM 13<sub>1</sub>.

[0122] The display data *Ddisp* on the RAM 33<sub>1</sub> is transferred to the output unit 35<sub>1</sub> by the CPU 31<sub>1</sub>. The output unit 35<sub>1</sub> then executes a display process in accordance with the received display data *Ddisp* so as to display an image representing the shop details *INshop3* (sequence SQ56). This allows the user to browse the shop details *INshop3*. It is assumed Assuming here that the user browses the shop details *INshop3* of FIG. 20A.



[0123] After sequence SQ55, if the user decides to go to the displayed shop and wants to get the bonus of the shop, he or she instructs as such through operation of the input unit 34<sub>1</sub>. In response thereto, the CPU 31<sub>1</sub> stores in the bonus identifier storage 5 36<sub>1</sub> the second URL of the current bonus-attached file *Fbonus3* as the bonus identifier *IDbonus* (sequence SQ57). Here, the bonus identifier *IDbonus* stored in sequence SQ56 is now referred to as an external bonus identifier *IDbonus*". The external bonus identifier *IDbonus*" is the one used in sequence SQ22 of FIG. 22 10 below, and is not described here in detail.

[0124] After sequence SQ57, the CPU 31<sub>1</sub> cuts off access to the Internet 4<sub>1</sub> (sequence SQ58), ~~and~~ then determines that the user as heading for the target shop, and thus starts to search for a route from the user's current position to the shop (Sequence SQ59). 15 Here, the target shop is the one in the currently received bonus-attached file *Fbonus3*. Referring to the flowchart of FIG. 25, the procedure of sequence SQ59 is described more specifically.

[0125] In FIG. 25, the CPU 31<sub>1</sub> sets a starting point and a destination of a route to be searched (step ST591). As a specific 20 example of step ST591, the CPU 31<sub>1</sub> receives the calculation result from the receiver 311<sub>3</sub>, and then sets the latitude and the longitude indicated thereby as the starting point. Then, the CPU 31<sub>1</sub> extracts the latitude and longitude indicated by the representative position *Ptypc* from the bonus-attached file *Fbonus3*. Alternatively, the 25 user designates the starting point through operation of the input

unit 34<sub>1</sub>. The CPU 31<sub>1</sub> sets thus designated starting point as it is. Even if so, the destination is the one defined by latitude and longitude indicated by the representative position *Ptypc* extracted from the bonus-attached file *Fbonus3*.

5   **[0126]**     After step ST591 is through, the CPU 31<sub>1</sub> reads, from the cartographic database *DBcart* in the cartographic database storage 310<sub>3</sub> to the RAM 33<sub>1</sub>, the road network data of an area needed in the next step ST593 (step ST592). Read in step ST592 is the road network data of a rectangular region including both the  
10   starting point and the destination set in step ST581.

**[0127]**     The CPU 31<sub>1</sub> then searches for an optimum route from the starting point to the destination using the road network data read in step ST592 (step ST593). To be more specific, the optimum route is derived by using a route selection algorithm typified by the  
15   Dijkstra's algorithm, and typically is a route which allows the user to reach his or her destination in the shortest time or distance. The CPU 31<sub>1</sub> creates route data representing, by nodes and links, the optimum route derived in step ST593 (step ST594). This is the end of the process of FIG. 25, and the procedure now goes to  
20   a user's guidance process of FIG. 24 (sequence SQ60). Referring to the flowchart of FIG. 26, the detailed procedure of sequence SQ60 is next described.

**[0128]**     In FIG. 26, the CPU 31<sub>1</sub> receives the calculation result from the receiver 311<sub>3</sub>, and estimates the latitude and longitude  
25   found therein as the user's current position (step ST601). Here,

as is well known, the position information transmitted from artificial satellites previously includes an error, and thus it is preferable for the CPU 31<sub>1</sub> to correct those latitude and longitude based on correction information transmitted from a base station accommodated in D-GPS (Differential GPS). If this is the case, the data terminal equipment 3<sub>1</sub> requires a receiver specifically for the D-GPS. To be prepared for a case where the position information from artificial satellites cannot be received, the data terminal equipment 3<sub>1</sub> is preferably provided with a sensor for autonomous navigation. In the case where the data terminal equipment 3<sub>1</sub> is specifically designed for vehicles, a typified example ~~as for~~ a sensor for autonomous navigation is a vehicle-speed sensor or a gyro compass. If the data terminal equipment 3<sub>1</sub> is designed to be carried along (not for vehicles), a pedometer or an azimuth sensor is a typical sensor for autonomous navigation.

**[0129]** After step ST601, the CPU 31<sub>1</sub> reads, from the cartographic database *DBcart* in the cartographic database storage 310<sub>3</sub> to the RAM 33<sub>1</sub>, the cartographic file for the area around the user's current position (step ST602). For convenience, the cartographic file reading is presumably never failed to be done after step ST601. This is not restrictive, and procedure may skip step ST602 as required.

**[0130]** Next, the CPU 31<sub>1</sub> creates guidance data (step ST603). More in detail, the CPU 31<sub>1</sub> rips one specific cartographic file on the RAM 33<sub>1</sub> for the display process on the output unit 35<sub>1</sub> this

time. As to thus ripped cartographic file, the CPU 31<sub>1</sub> then applies a rendering process using a frame memory which is reserved in RAM 33<sub>1</sub>, and creates intermediate image data representing the map to be displayed. From the route data derived in sequence SQ59, the CPU 31<sub>1</sub> creates an object representing the route to the destination (the target shop) from the current position estimated in step ST601. The CPU 31<sub>1</sub> then blends to the intermediate image data the route object and an object representing a pointer pointing the user's current position together, thereby creating the guidance data. The guidance data represents an image resultantly derived by merging the user's current position and the route to the destination on the map to be displayed, and is transferred from the frame memory (RAM 33<sub>1</sub>) to the output unit 35<sub>1</sub>. The output unit 35<sub>1</sub> then performs the display process in accordance with the received guidance data, and displays on its screen the map onto which the user's current position and the route to the destination are merged (step ST604).

**[0131]** Then, the CPU 31<sub>1</sub> determines whether the user's current position is the same as the destination (step ST605). If no, the CPU 31<sub>1</sub> determines that the user ~~does~~ has not yet reach the target shop, i.e., destination, and the procedure returns to step ST601 to repeats steps ST601 to ST604. On the other hand, if the user's current position is the same as the destination, the CPU 31<sub>1</sub> determines that the user has reached the destination, ~~and~~ this is the end of the process of FIG. 26, and data communications of FIG. 24 is terminated.

[0132] After such a guidance process is through, the user gets services from the target shop, make purchases thereat, and receives the corresponding bonus. To receive the bonus, the data terminal equipment 2<sub>1</sub> and 3<sub>3</sub> ~~performs~~ perform therebetween such data communications as shown in FIG. 8, which is not described again.

[0133] As described above, with the data transmission system *Sdt*<sub>3</sub>, the user can receive a bonus from the corresponding shop as with the data transmission system *Sdt*<sub>1</sub>. Further, the data terminal equipment 3<sub>3</sub> can make a guidance for the user to the target shop. In this sense, the data transmission system *Sdt*<sub>3</sub> has better usability.

[0134] If the data terminal equipment 3<sub>1</sub> is so designed as to be carried along (not for vehicles), in step ST593, not only searching for an optimum route from the starting point to the destination, if the user needs to use any public transportation such as trains, any helpful information may be displayed, i.e., timetable information about a station closest to the starting point or the destination, train type (e.g., express, local) to take, estimated time for reaching the closest station or the destination, the estimated time taken to the destination, the fare to the destination.

[0135] The data terminal equipment 3<sub>1</sub> may execute a process of making a reservation at the shop after searching for the optimum route from the starting point to the destination. Further, if noticing that the user may not be at the destination at the estimated

time, or be at the shop in time before the reservation time, the data terminal equipment 3<sub>1</sub> may notify the user as such through display. In such a case, the data terminal equipment 3<sub>1</sub> may also executes a process of canceling the reservation or changing the reservation time.

[0136] The data transmission systems *Sdt*<sub>3</sub> and *Sdt*<sub>2</sub> may be combined together, and therewith, the user may receive services from the shop, or make purchases thereat with no cash payment.

[0137] In the third embodiment, a single data terminal equipment 2<sub>3</sub> is presumed for convenience to perform both data communications of FIGS. 23 and 8. This is not restrictive, and two of the data terminal equipment 2<sub>3</sub> physically differed from each other may be provided, ~~and~~ whereby one may be in charge of data communications of FIG. 23, and the other data communications of FIG. 8.

[0138] Also, in the above, in the case where the data terminal equipment 3<sub>3</sub> guides the user to the shop, the data terminal equipment 2<sub>3</sub> on the shop side may provide the user any bonus which is considered better than the one in the bonus-attached file *Fbonus3*.

[0139] Also in the above, responding to the request *RSsd3* from the data terminal equipment 3<sub>3</sub>, the WWW server 1<sub>1</sub> may search for any bonus-attached file *Fbonus3* whose bonus is most advantageous for the user, and the found bonus-attached file *Fbonus3* may be forwarded back to the data terminal equipment 3<sub>3</sub>.

[0140] While the invention has been described in detail, the foregoing description is in all aspects illustrative and not

restrictive. It is understood that numerous other modifications and variations can be devised without departing from the scope of the invention.

ABSTRACT OF THE DISCLOSURE

5                   ~~Data~~A first data terminal-equipment-3<sub>1</sub> device receives  
a bonus-attached file including a shop bonus provided to a ~~user~~,  
5    user and a bonus identifier for uniquely identifying the bonus,  
and stores the bonus identifier included in the bonus-attached  
file.   ~~Data~~A second data terminal-equipment-2<sub>1</sub> device previously  
stores another bonus identifier for uniquely identifying the bonus  
provided to the user of the first data terminal-equipment-3<sub>1</sub> device.  
10 Through data communications with the first data terminal-equipment  
3<sub>1</sub> device, the second data terminal-equipment-2<sub>1</sub> device requests  
the bonus identifier on the first data terminal-equipment-3<sub>1</sub> device  
side. If determining that the bonus identifier received from the  
first data terminal-equipment-3<sub>1</sub> device is ~~as being~~ the same as  
15 the data identifier stored therein, the second data terminal  
equipment-2<sub>1</sub> device provides the bonus specified by the bonus  
identifier to the user of the first data terminal-equipment-3<sub>1</sub>  
device. In such a manner, the data transmission system is improved  
in user's usability with no more need for printing coupons.